



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,588	10/31/2003	Ezio Valdevit	112-0124US	1886
85197	7590	03/30/2010	EXAMINER	
Wong Cabello Lutsch Rutherford & Bruculeri LLP 20333 Tomball Parkway, 6th Floor Houston, TX 77070			ADHAM, MOHAMMAD SAJID	
			ART UNIT	PAPER NUMBER
			2471	
			MAIL DATE	DELIVERY MODE
			03/30/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/699,588	VALDEVIT, EZIO	
	Examiner	Art Unit	
	MOHAMMAD S. ADHAM	2471	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 December 2009.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-9, 11-18, 55-63, 65-72 and 83-130 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-9, 11-18, 55-63, 65-72, and 83-130 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

- Applicant's amendment filed 12/2/2009 is acknowledged.
- Claims 1,4,5,14,55,58, and 59 have been amended.
- Claim 10,19-54,64, and 73-82 are cancelled.
- Claims 84-130 have been added.
- Claims 1-9,11-18,55-63,65-72, and 83-130 are pending.
- Applicant's response and amendment with respect to the rejection of claims 55-72 under 35 USC 101 is noted and the rejection is withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1-9,11,12,16-18,55-63,65,66,70-72,83-93,97-109,113-125,129, and 130 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cometto (US 7,206,288) in view of Soumiya (US 6,671,257).

Re claims 1,55,83,99, and 115:

Cometto discloses a *first and second node fibre channel device connected to a fabric* (Fig.1 ref.103 and 123 are node devices).

Cometto further discloses a *fibre channel fabric connected to the first and second node devices* (Fig.1 ref. 131).

Cometto further discloses *the fibre channel fabric including a first fibre channel switch and a second fibre channel switch coupled to the first switch* (Fig.1 ref. 101,111,113,115,117,119, 121 are coupled fibre channel switches).

Cometto further discloses *the first and second switch having previously determined all routes between all switches and all nodes in the fabric* (Col.1 lines 35-37 determining characteristics associated with routes in fibre channel networks and Col.6 lines 31-32 synchronization is maintained with other fibre channel switches).

Cometto further discloses *a plurality of ports configured to receive and transmit frames* (Col.6 lines 38-39 received at an input port. It should be noted that a fibre channel switch can have one or more input ports and Col.6 line 59 an output port is then selected).

Cometto further discloses *a fabric manager coupled to the ports to obtain the received frame and provide a frame to be transmitted* (Fig.1 where the fibre channel switches contain ports and Col.1 lines 50-51 the fibre channel frame is transmitted downstream toward the destination).

Cometto further discloses *the fabric manager configured to add information to the frame, the information including receive and transmit port identity and switch identity* (Col.6 lines 46-50 changing header information as well as adding information such as an input port number and a field uniquely identifying the switch and Col.7 lines 21-22 source and destination identifiers in the frames are swapped).

Cometto does not explicitly disclose *adding measured transmit and receive rates of the port receiving the frame to the frame, wherein the measured transmit and receive rates of the port are determined from an amount of data respectively transmitted and received by the port during a defined time period.*

Soumiya discloses *adding measured transmit and receive rates of the port receiving the frame to the frame* (Fig.26 ref. 8~9 is a rate field and Col.27 lines 52-67 calculates the ER based on the result of the measurement and Col.37 line 44- Col.38 line 15 counting the number of arrived cells during an observation time and using that measurement in calculating the ER).

Soumiya further discloses *wherein the measured transmit and receive rates of the port are determined from an amount of data respectively transmitted and received by the port during a defined time period* (Col.37 line 44- Col.38 line 15 counting the number of arrived cells during an observation time and using that measurement in calculating the ER – where counting the number of arrived cells is measuring an amount of data and where the observation time is a defined time period).

Cometto and Soumiya are analogous because they both pertain to network communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cometto to include rate information as taught by Soumiya in order to more efficiently choose a path for transmission and to minimize congestion.

Re claims 2-7,56-61, 84-89,100-105, and 116-121:

As discussed above, Perlman meets all the limitations of the parent claim.

Cometto further discloses *information including the link cost of a link* (Col.6 lines 53-55 the techniques of the present invention provide mechanisms for determining characteristics for transmission between many hops in a route between a source and the destination - where the determined characteristics are a "link cost").

Cometto does not explicitly disclose *the information including transmit and receive rates based on a first defined period and a second defined period that is greater than the first defined period and the number of frames and words transmitted and received.*

Soumiya discloses *the information including transmit and receive rates based on a first defined period and a second defined period that is greater than the first defined period and the number of frames and words transmitted and received* (Fig.26 ref. 8~9 is a rate field, Col.26 lines 21-23 the rate changing unit may change the explicit rate that the rate calculating unit calculates at a

predetermined ratio and Col.35 lines 21-36 the prolongment of the observation period means that an interval between ER calculation times becomes longer. The capability for calculating the ER in an observation period which is shorter than a specified observation period and Col.7 lines 27-28 “an arrived cell number counter for counting a number of arrived cells in correspondence with an output channel” where calculating the transmission rate also contains information about the amount of frames and words transmitted).

Cometto and Soumiya are analogous because they both pertain to network communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cometto to include rate information as taught by Soumiya in order to more efficiently choose a path for transmission and to minimize congestion.

Re claims 8, 62,90,106, and 122:

Cometto discloses *an original source and an original destination* (Col.1 lines 46-47 The fibre channel frame identifies the source fibre channel switch and a destination).

Cometto further discloses *adding information to the frame when the frame is traveling from the original source to the original destination* (Col.4 lines 46-48 Each intermediate hop in the route toward the destination also inserts time stamp information into the frame).

Re claims 9,63,91,107, and 123:

Cometto discloses *adding information to the frame when the frame is traveling from the original destination to the original source* (Col.7 lines 9-35 A loopback switch may also be a destination switch. Source and destination identifiers in the frame are swapped. Other source and destination information is swapped).

Re claims 11,12,65,66,92,93,108,109,124, and 125:

Cometto discloses *selecting the port to transmit the frame based on source routing information contained in the frame* (Col.2 lines 7-8 the fibre channel frame identifying the source fibre channel switch and a destination - where the source and destination information is used to route the frame).

Re claims 16 and 70:

Cometto discloses *an extended link services frame* (Fig.2 Extended Inter-switch Links header).

Re claims 17,71,97,113, and 129:

Cometto discloses *determining if the switch is the original destination of the frame, and if so, modifying the frame to cause it to return to the original source* (Col.7 lines 9-35 A loopback switch may also be a destination switch. Source and destination identifiers in the frame are swapped. Other source and destination information is swapped).

Re claims 18,72,98,114, and 130:

Cometto discloses *determining if the switch was the original source of the frame and if so, to capture the frame and not further transmit the frame* (Col.1 lines 47-50 The fibre channel frame includes a loopback field indicating that the fibre channel frame should be looked back to the source fibre channel switch).

2. Claims 13,67,94,110, and 126 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cometto in view of Soumiya as applied to claims 12,30,48, and 66 above, and further in view of Wong (US 6,363,077).

Re claims 13,67,94,110, and 126:

As discussed above, Cometto meets all the limitations of the parent claims.

Cometto does not explicitly disclose *using normal routing rules if the source routing information does not indicate a device directly connected to the switch.*

Wong discloses *using normal routing rules if the source routing information does not indicate a device directly connected to the switch* (Col.9 lines 53-67 If the destination port is a local network port of the current receiving device, only a local transaction must be processed. If the destination port is a network port of a device of the fabric other than the current receiving device, the data packet must be transferred from the current receiving device to the destination device via the data ring by processing).

Cometto and Wong are analogous because they both pertain to data communication.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cometto to include using normal routing rules if the source routing information does not indicate a device directly connected to the switch as taught by Wong in order to process transmit a packet to the destination and to allow packet processing.

3. Claims 14,68,95,111, and 127 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cometto in view of Soumiya as applied to claims 12,30,48, and 66 above, and further in view of Fredericks (US 6,347,334).

Re claims 14,68,95,111, and 127:

As discussed above, Cometto meets all the limitations of the parent claims.

Cometto further discloses *determining a destination address by retrieving data from the frame payload* (Fig.2 ref.221,223,225, and 227 and Col.5 lines 26-37 a world wide name (WWN)).

Cometto does not explicitly disclose *the frame is destination addressed to a well known address*.

Fredericks discloses *the frame is destination addressed to a well known address* (Col.6 lines 29-31 the RNID ELS message is sent to the Fabric Controller at the address hex “FFFFFD” as is well known).

Cometto and Fredericks are analogous because they both pertain to data communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cometto to include a frame destined to a well known address as taught by Fredericks in order to use a standard network setup and standard and well-known messaging.

4. Claims 15,69,96,112, and 128 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cometto in view of Soumiya as applied to claims 12,30,48, and 66 above, and further in view of Kanetake (US App. 2003/0137978).

Re claims 15,69,96,112, and 128:

As discussed above, Cometto meets all the limitations of the parent claims.

Cometto does not explicitly disclose *a plurality of equal cost routes that can be used for transmitting and transmitting the frame over all of such routes.*

Kanetake discloses *a plurality of equal cost routes that can be used for transmitting and transmitting the frame over all of such routes* (Para.[0004] Equal Cost Multipath (ECMP). If the topology is such that equal cost paths exists, then an attempt is made to divide traffic equally among the paths).

Cometto and Kanetake are analogous because they both pertain to data communication.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cometto to include routing the frame over all equal cost

routes as taught by Kanetake in order to efficiently use resources and load balance.

Response to Arguments

5. Applicant's arguments filed 12/2/2009 have been fully considered but they are not persuasive.

In the remarks, Applicant contends in Soumiya, the explicit rate is a calculated rate that is not determined from an amount of data transmitted and received during a defined time period.

The Examiner respectfully disagrees. Soumiya does disclose the measured rates are determined from an amount of data transmitted and received during a defined time period (Fig.26 ref. 8~9 is a rate field and Col.27 lines 52-67 calculates the ER based on the result of the measurement and Col.37 line 44-Col.38 line 15 counting the number of arrived cells during an observation time and using that measurement in calculating the ER). The amount of cells received (amount of data) in an observation period (defined time period) is measured and the rate is calculated based on this measurement. Therefore the rate in Soumiya is a measured rate determined from an amount of data transmitted during a defined time period.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MOHAMMAD S. ADHAMI whose telephone number is (571)272-8615. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571)272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mohammad S Adhami/
Examiner, Art Unit 2471

/Chi H Pham/
Supervisory Patent Examiner, Art
Unit 2471